

Computer Science Research Project Proposal Outline/Description

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Abstract

Describe the proposal in 100-200 words, give or take. The command-line `wc` utility is really useful here.

Take note that the abstract is typically written *last*. After all, how would you know *what* you're supposed to abstract in the first place, if you haven't written it yet?

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1 Introduction

Provide the reader with an overview or summary of your proposal. This typically sets up the application domain or primary needs addressed by your proposed project.

2 Previous Work

Review any papers, sources, or references used in formulating your proposed project. At this point, you should have already seen quite a few of these sections.

You should not only cite any information that you used to gain proficiency in this area, but also state how the work you are proposing to do is new or different. Specifically mention the gaps, issues, and “future work” in the literature are addressed by your proposal.

3 Statement of Work

This section — likely the longest component of the proposal — states the work that you propose to do. Detail is the key here; the more detailed the plan, the better. Break this section up into whatever structure is appropriate for your proposed project. Possible sections include, but are not limited to:

- A description of the idea, software, or device that is at the core of your proposal
- Any requirements or prerequisites that are needed to do the work
- A description of your test subjects, if any
- A list of uncertainties or unknowns, if any — in particular, state how these unknowns might affect the work that you propose to do

Be liberal with figures, tables, diagrams, code fragments, etc. The idea is to give the reader as complete a picture of the work that you’d like to do as possible.

4 Expected Outcomes

Since this is a proposal, you don’t really *know* what the results will be. However, you have an *expectation* of what they *might* be — after all, you wouldn’t seek to do this work if you didn’t think it will produce some kind of desired outcome.

This section describes what you expect to see — your hypothesis, in other words. This hypothesis is typically backed up by the work cited in your literature review, as well as your own proficiency in the subject area.

5 Evaluation Plan

The common theme of any research is that it is exploratory: as mentioned, you don't know what the final result of your work will be until you actually do it. However, since you *do* have a hypothesis of sorts, you want to have a plan for testing how closely the actual result of your work corresponds to your expected outcomes — this is the evaluation plan, and it should be described in this section.

As you have probably seen by now in the papers that you've read, the more objective the evaluation, the better. Plans that produce objective metrics with appropriate analysis work best. The bottom line is that you need an approach that will tell you, after the work is done, and as accurately and precisely as possible, how closely the work's results corresponded to your initial expectations.

6 Conclusion

Summarize the overall proposal here, repeating all primary points: background and motivation (based on previous work), the actual work that you propose to do, the results that you expect, and how you'll test these results.

7 References

Your references should go at the end, and of course, this should be automatically generated for you by LaTeX/BibTeX.